

## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

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Applicant's or agent's file reference HP/5-22604	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP 03/00068	International filing date (day/month/year) 07.01.2003	Priority date (day/month/year) 15.01.2002
International Patent Classification (IPC) or both national classification and IPC C09B26/04		
Applicant CIBA SPECIALTY CHEMICALS HOLDING INC et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 6 sheets, including this cover sheet.

This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I  Basis of the opinion
- II  Priority
- III  Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV  Lack of unity of invention
- V  Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI  Certain documents cited
- VII  Certain defects in the international application
- VIII  Certain observations on the international application

Date of submission of the demand  21.07.2003	Date of completion of this report  05.04.2004
Name and mailing address of the International preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer  Stellmach, J Telephone No. +49 89 2399-8279



**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

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**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

**Description, Pages**

1-120 as originally filed

**Claims, Numbers**

1-12 received on 21.07.2003 with letter of 08.04.2003

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- the language of publication of the international application (under Rule 48.3(b)).
- the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- contained in the international application in written form.
- filed together with the international application in computer readable form.
- furnished subsequently to this Authority in written form.
- furnished subsequently to this Authority in computer readable form.
- The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- the description, pages:
- the claims, Nos.:
- the drawings, sheets:

5.  This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

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**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Yes:	Claims	1-14
	No:	Claims	
Inventive step (IS)	Yes:	Claims	
	No:	Claims	1-14
Industrial applicability (IA)	Yes:	Claims	1-14
	No:	Claims	

**2. Citations and explanations**

**see separate sheet**

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**SECTION V -----**

**1. Prior art**

Documents (1) - (9) which were cited both in the **International Search Report** and the **Written Opinion** are considered to represent relevant prior art in this **International Preliminary Examination Report**; the numbering will be adhered to in the rest of the procedure.

- (1) DE-A-11 33 054
- (2) EP-A-0 065 717
- (3) WO-A-99/20 234
- (4) WO-A-99/20 235
- (5) WO-A-97/20 545
- (6) WO-A-95/01 772
- (7) WO-A-95/15 144
- (8) EP-A-1 155 679
- (9) EP-A-1 062 940

**2. Unity and Novelty**

2.1 The Applicant's attention is drawn to the fact that the application in its present version does not form a **single inventive concept** within the meaning of **Rule 13 (1) PCT**. By the 2 **provisos** in claim 1 concrete examples from citations (1) and (2) with the same property (*cationic dye*) are disclaimed. Consequently, for the general formula of claim 1 there exists no "**single general inventive concept**", since starting from the viewpoint that all dyes/compounds embraced by the general formula of claim 1 are **equivalent** and thereby conferring **unity** on the claim, the fact that a group of compounds is found not to be **inventive** then means that none of the other - equivalent - compounds can be **inventive**. If however, the compounds are not to be regarded as equivalent, then lack of unity exists (no "**special technical feature**" which defines a contribution of all the claimed inventions (equivalents) considered as a whole make over the prior art. The claimed products per se do not possess a **common technical feature** in order to long to a **common inventive concept** in the sense of **Rule 13 (1) PCT**. It is additionally stressed that there is no basis for the substantiation of **inventive step** by way of **disclaimer/proviso**.

2.2 Example 8 from citation (1) and example 1c from citation (2) are excluded from compound protection by **proviso** (positive disclaimer) introduced at the end of claim 1.

The claimed cationic **hydrazo dyes** structurally differ from those of the cited prior art (1) - (8) with the same basic skeleton and the same property (*cationic dye*) either by the definition of the substituent R<sup>2</sup> ( H => Alkyl ) or by the substituent pattern of the **pyridyl** residue ( replacement Alkyl => Benzyl, see also both the **provisos** ). The structural difference to the *cationic dyes* disclosed in citation (9) is the presence of a further substituent. The requirements of **Article 33 (2) PCT** appear thus to be met.

3. Inventive step

For the assessment of **inventive step** ( **Article 33 (3) PCT** ) the **technical problem** ( **Rule 5.1 (a) (iii) PCT** ) underlying the application in suit has to be defined objectively starting from the document of the closest prior art. Apart from the **provisos** ( overlap, see above ) as mentioned above also documents (3) - (6) disclose reactive cationic **hydrazo dyes** ( analogues ) and their use 'inter alia' for dyeing of protein material. Starting from this closest prior art the technical problem can thus be considered to be the provision of further *reactive hydrazo dyes* for dyeing of organic material, especially protein containing material. As solution of this problem the hydrazo dyes as claimed in claim 1 with the same properties are proposed.

A. In citations (3) - (5) and (9) reactive cationic dyes are mentioned in general form as part of hair dyeing compositions ( see (9), page 2, line 53 ). The skilled person starting from the *reactive cationic hydrazo dyes* of one of the documents of the respective closest prior art (3) - (6) in order to solve the above defined problem with regard to the structural difference ( see above **novelty** ) would expect the claimed *reactive cationic dyes* to be useful for the dyeing of organic material, especially keratin containing fibres. For the skilled person working in the field of *reactive cationic dyes/compounds* for dyeing of organic material there is a clear **incentive** to apply the general principle of **structure-property-relationships** i.e. he would expect the claimed dyes with regard to the structural difference to the prior art compounds to be 'inter alia' useful for dying.

B. No **inventive step** in the sense of **Article 33 (3) PCT** can be seen in the provision of the *reactive cationic hydrazo dyes* of present claim 1 and their use for dying of keratin containing fibres i.e. when providing the new cationic hydrazo compounds the dyeing property is **obvious** for the skilled person. The data provided by the Applicant ( application examples G/1 - G/35, pages 87 - 120 ) are not sufficient in order to recognize **inventive step**, since they do not demonstrate any surprising effect in comparison with the compounds ( analogues ) of the respective closest prior art (3) - (6). Taking into account the common reaction mechanism, the notional skilled person was provided with a clear hint from the prior art pointing him in the direction of the claimed com-

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pounds, and it was only necessary to confirm experimentally that the highly probable result was in fact obtained. Moreover, the modifying feature should not only characterize the invention in the claim, i.e. distinguish it from the prior art, but must contribute causally to the improvement of the capability thereby achieved. Since there is a clear **incentive** in the prior art to expect the claimed compounds to be suitable for his purpose ( common mechanism ), the necessity of experimentally confirming a reasonably expected result does not render an invention unobvious. **Inventive step** in the sense of Article 33 (3) PCT could only be recognized if in comparison with the closest possible structural approximation ( see the respective novelty rendering features as defined above ) such un-expected effects could be demonstrated. The Applicant's attention is furthermore drawn to the fact that it is necessary that the technical problem is actually solved.

C. Finally, it is realized that the Applicant is entitled to claim all obvious modifications of what he has described and that alternative variations have to be supported by a certain number of examples. Furthermore, the extent of a "reasonable generalisation" only depends upon the question of the relative distance to the prior art compounds. It is stressed that only such structural variants of compounds/dyes can be claimed which are a solution to the above stated problem i.e. which illustrate the alleged unexpected effects.

**4. Industrial applicability**

No objection re industrial applicability of claims 1 - 12 arises insofar the claimed compounds would exhibit the alleged unexpected properties ( Article 33 (4) PCT ).

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